

Project:

GPS Plus Drop Off Manager

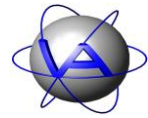
Title:

User's Manual

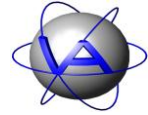
Document No.: Drop-off User's Manual

Version: 1.2

Last Change: 25.11.2011



	Name	Date	Signature
Prepared by	Annette Krop-Benesch	15.10.2010	
Edited by	Annette Krop-Benesch	25.11.2011	
Checked by			
Approved by			
Authorized by			



DOCUMENT CHANGE RECORD

Issue	Date	Item(s) Affected	Description
1	15.10.2010	-	Initial Issue
1.1	01.02.2011		Minor changes in lay-out and screen shots
		Installation	Automatic set-up and installation of driver for release transmitter
1.2	25.11.2011	Warning	Drop-Off can only be used once



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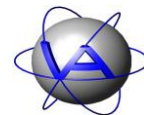


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1 The drop-off

The drop-off is a device that releases the collar either

- after a preset time period (relative timer mode),
- at a preset date and time (absolute timer mode), or
- on demand via radio transmission.

The drop-off is a pyrotechnical unit contained in the battery case (Figure 1). For release, two pins attaching the battery case to the collar belt are driven out by spring pressure and the collar opens.

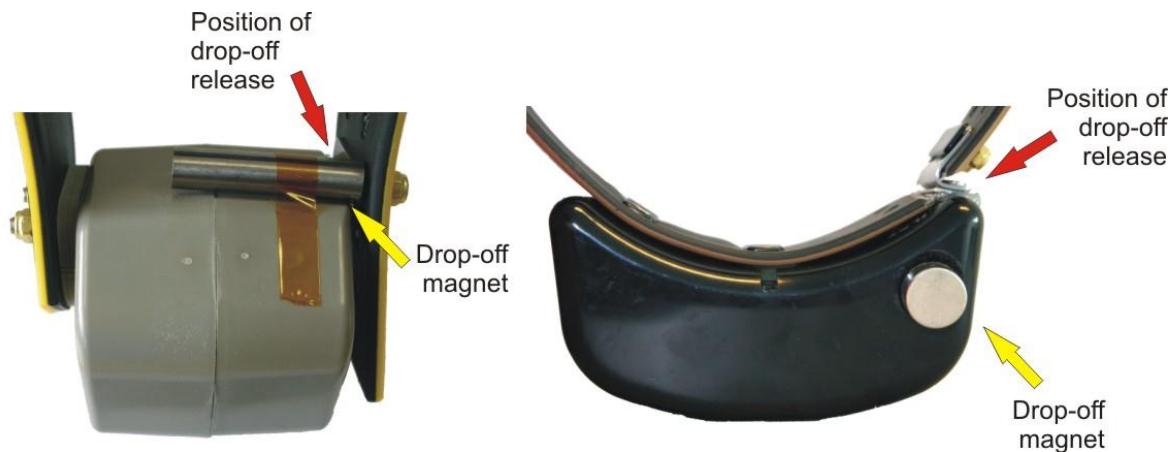


Figure 1: Battery case with integrated drop-off unit and magnet to put drop-off in stand-by mode

The GPS Plus Drop Off Manager is a software to configure (**configuration range of some centimeters, not under field conditions!**) and to read out drop-off data.

Note: The pyrotechnical unit is hermetically sealed and can thus be send by mail or taken on a plane without violation of safety regulations. It is excluded from UN Class 1 – Non Explosive.

Note: The drop-off is can only be used once. After it has released the collar, the entire battery pack needs to be replaced.

The GPS Plus Drop Off Manager is a software to configure (**configuration range of some centimeters, not under field conditions!**) and to read out drop-off data.



2 Fast guide to use the drop-off

In most cases you will receive the drop-off fully configured to your requirements. To make sure it works properly, follow some basic steps:

In the lab/office/field station:

1. **Make yourself familiar with the entire collar and its parts (for details on the collar refer to the Collar Manual)**
2. To check and maybe change the configuration of the drop-off, you need either an UHF or VHF Handheld Terminal Version 5 or higher, or a Drop-off Release Transmitter. Attached this device via USB to your computer and start the GPS PLUS Drop Off Manager.
3. Register the new drop-offs on your computer following the instruction in chapter 8: Register a new drop-off.
4. Check the release mode and time of the collar following the instruction in chapter 7.4: Drop-off telemetry.
5. If necessary, change release mode and time following the instruction in chapter 7.2: Release Time.

When deploying the collar

6. **Make sure the magnet is removed from the battery case, otherwise the drop-off stays deactivated and will not release the collar.**

Note: Though a radio-and-timer controlled drop-off can be triggered from a distance of up to 500 m, it is not possible to change its configuration from that distance.

Registration, communication, and set-up of the drop-off will be explained in more detail in the next chapter.

Drop-off release:

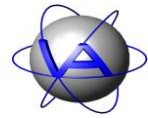
The drop-off release is explained in detail in the UHF/VHF Handheld Terminal or the Radio Drop-off Transmitter Manual. If you want to release the drop-off, follow these steps:

- Turn on the Terminal and press **F6**.
- Select a drop-off from the list using the arrows (keys **8**, **4**, **6** and **2**) and press **Enter**.
- Press **F5** to release the drop-off. Press **Enter** to return to the drop-off list.



3 Communication with drop-off

To communicate and configure the GPS Plus Drop Off Manager, you need either a UHF Handheld Terminal hardware Version 5.0 or higher, or a Drop Off Release Transmitter (both device are named as “terminal” in software and handbook). Connect the terminal to your computer via USB cable and turn on the terminal. The drop-off needs to be positioned within some centimeters of the terminal. Connection between terminal and drop-off is established via radio transmission. In order to communicate with a drop-off it has to be registered on the Terminal. This is done in the GPS Plus Drop Off Manager (see Chapter 6). Though the terminal is needed to transmit commands and information between the GPS Plus Drop Off Manager and the drop-off, input is done entirely through the computer.



4 Getting started

The GPS Plus Drop Off Manager is a tool to configure the terminal, which controls and communicates with the drop-offs. It allows you to read out telemetry data from this terminal and the drop-offs, register drop-offs on a computer and on the terminal, and configure these drop-offs.

To install the GPS Plus Drop Off Manager, go to the VECTRONIC CD delivered with your collar and find the file GP_Drop-Off_Manager_X_X_X_setup.exe. Start this file and follow the instructions.

All program options can be accessed with the left trees ("Devices", "Configuration").

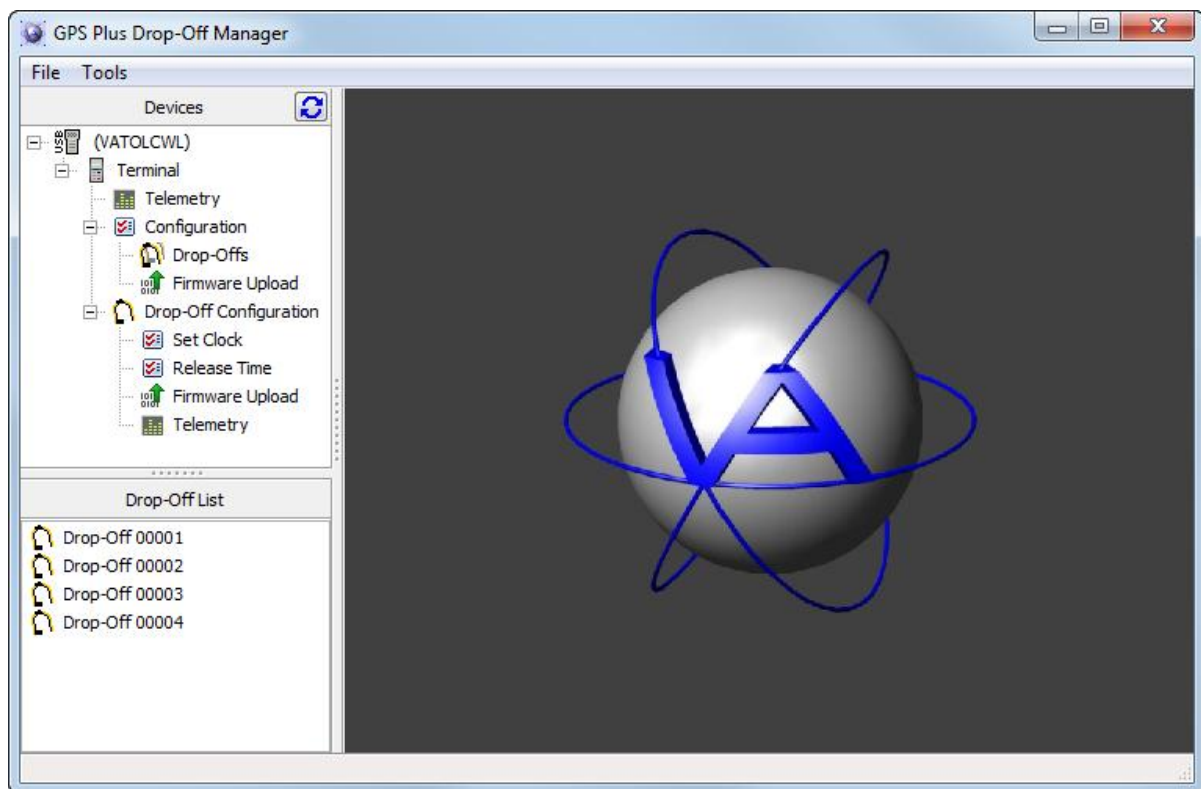


Figure 2: Opening window with extended trees on left side

Note: The device tree will only appear if a terminal is attached and switched on; otherwise the device field will remain empty.



5 Reading out Terminal Telemetry

The command Terminal → Telemetry allows you to read out telemetry data from your UHF Handheld Terminal or the Drop Off Release Transmitter. In the center section of the screen, you will always see the serial number of the connected terminal.

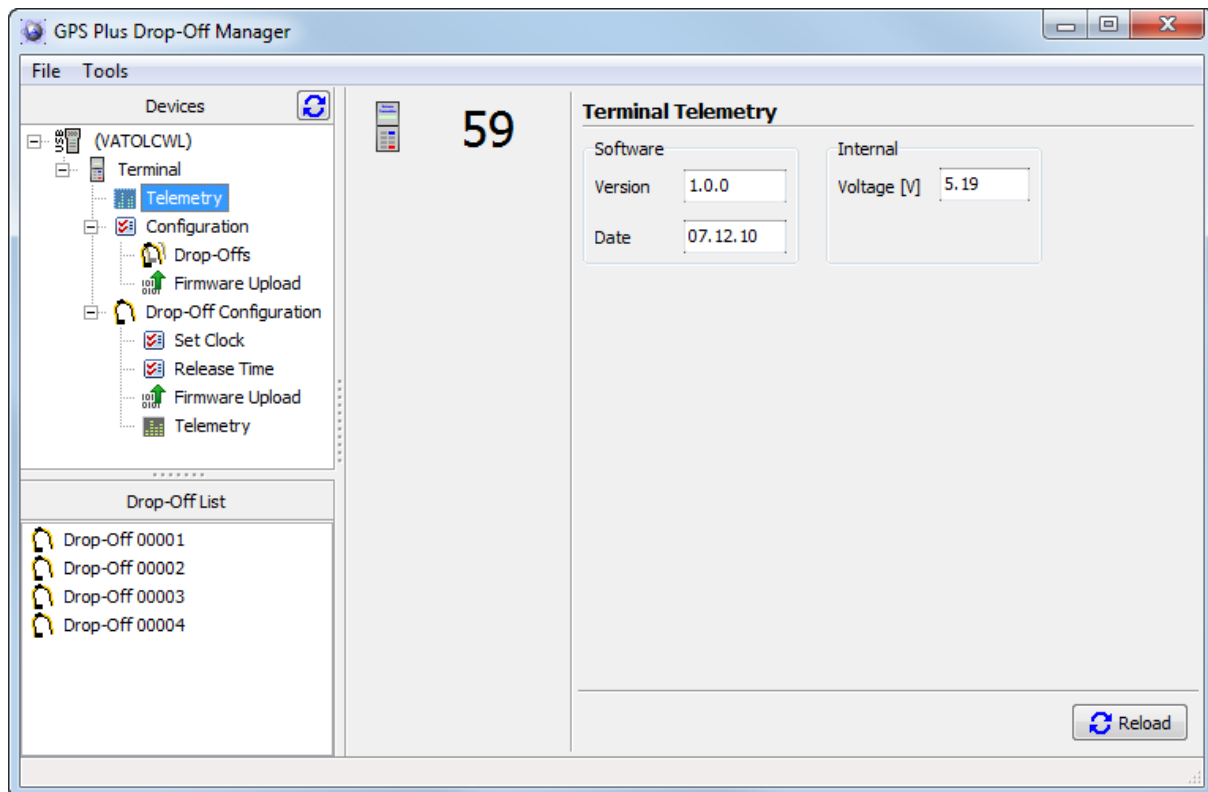


Figure 3: Terminal Telemetry window for Drop Off Release Transmitter

Software

Version	Number of the software version on the terminal
Date	Release date of software version currently running on terminal

Internal

Voltage [V]	Battery Voltage The Enloop™ rechargeable batteries in the Drop Off Release Transmitter must be in a range between 4.05 and 5.0 Volt. For radio release of the drop-off, the voltage should be close to 5.0 Volt. The internal Li-Ion battery of the UHF Handheld Terminal has a valid voltage range of 3 – 4.1 Volt.
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6 Configuration of the drop-off list on the Terminal

Before you can change the drop-off settings, you need to register the drop-off on your terminal. The command Terminal → Configuration → Drop-Offs opens a window to transfer drop-offs which are registered on the computer to the terminal and to edit the terminal's drop-off list.

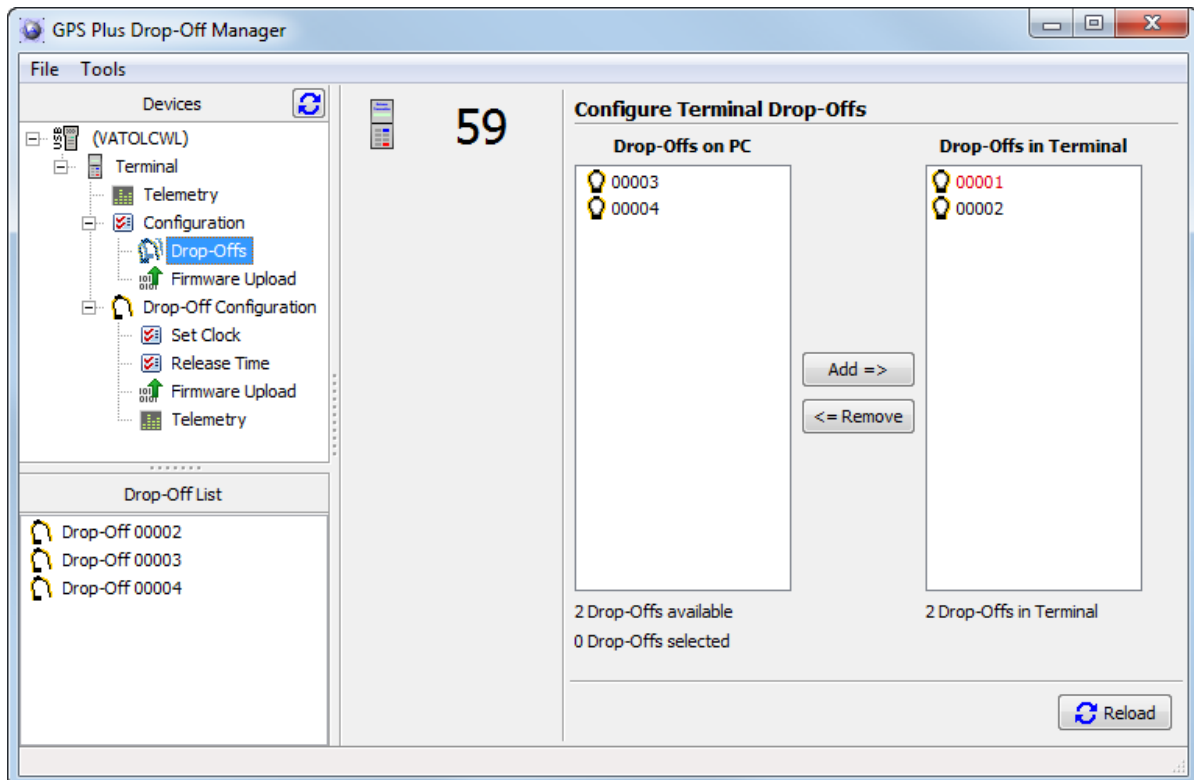


Figure 4: Window to register drop-offs registered on the computer to the terminal

Two lists are shown. On the left is a list of all drop-offs registered on the computer, but not on the terminal. On the right is a list of all drop-offs registered on the terminal. Drop-offs registered on the computer are coloured black. Drop-offs registered only on the terminal are coloured red. You can only configure drop-offs that are registered on the computer you are currently working at AND on the terminal you are using.

Underneath the left list, the number of available drop-offs and of those currently selected is given. To add a drop-off to the terminal, select it and press **Add** or drag it to the right window with the cursor. To remove a drop-off from the terminal list, select it and press **Remove**.

Note: If you remove a drop-off from the terminal which is NOT registered on the current computer, you will not be able to register it again unless you connect the terminal to a computer on which the drop-off is registered.



If you attempt to remove a drop-off not registered on your computer, the following warning will appear (Figure 5):

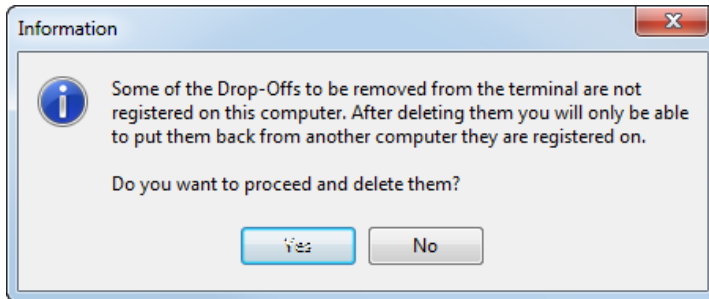



Figure 5: Warning before unregistered drop-offs are removed from terminal

6.1 Terminal Firmware Upload

If you are using a Drop Off Release Transmitter, you can upload new firmware at this point. Choose the firmware .BIN-file with the  button and press **Apply**. You can follow the upload on the progress bars on the screen and on the transmitter.

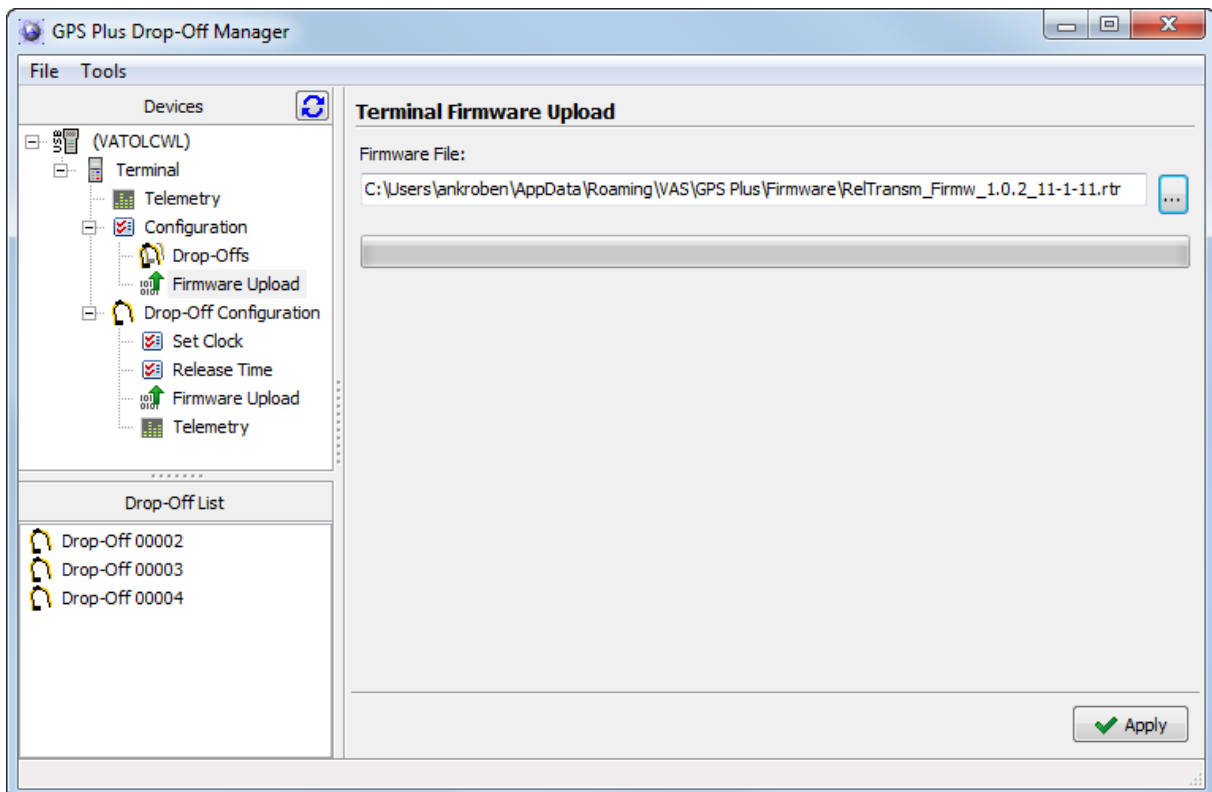


Figure 6: Window for terminal firmware upload



7 Drop-off set-up

7.1 Setting the drop-off clock

You can select a drop-off's serial number from the drop down list and change its date and time. With **Today** and **Now** you set the drop-offs time to the current computer time. Note that the time given in the centre section is the terminal's time, which is not necessarily identical with the drop-off's time. Transfer the new time to the terminal by pressing **Apply**.

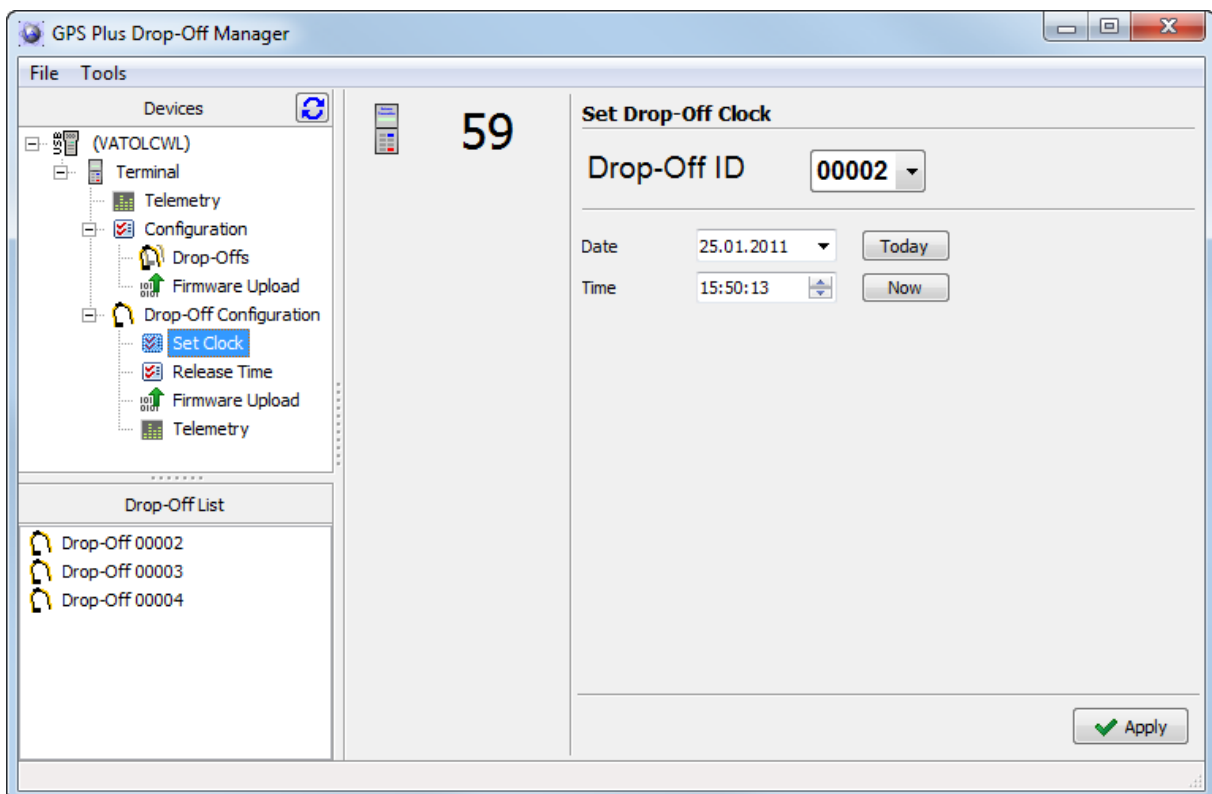


Figure 7: Window for setting the drop-off clock

The window shown in Figure 8 will appear in succession:

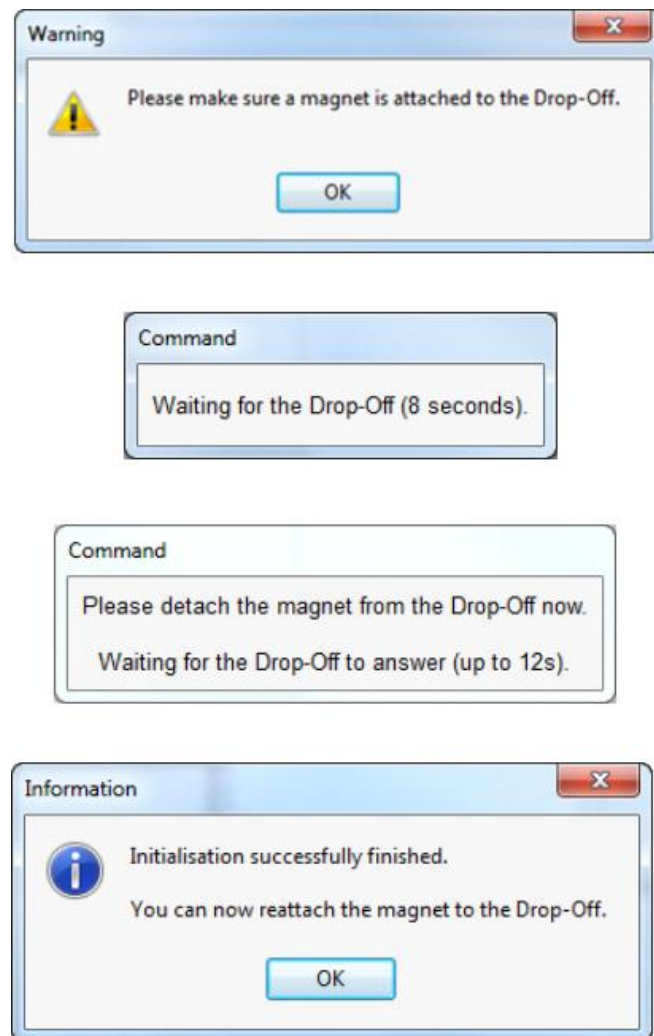
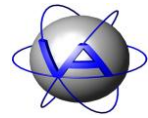
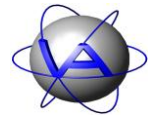


Figure 8: Windows for clock initialisation

If the magnet is not already attached to the drop-off, put it now to the designated dent or felt pad (see Figure 1 for correct position). Wait eight seconds for the drop-off to respond to the terminal. When the next window appears, detach the magnet from the drop-off. After up to 12 seconds, the next window will inform you that the initialisation has been finished.



7.2 Release Time

You can set a drop-off release period or time. First choose a drop-off's serial number from the drop down list (Figure 9). **This window will not give you the current settings of the drop-off, but the default settings.** There are two modes for the timer controlled release:

- **Relative Mode:** You define a time span of weeks, days and hours after the magnet has been detached from the drop-off. The maximal time span that can be entered is 208 weeks and 5 days (4 years). This is the estimated life span of the drop-off's battery, so a longer time span would very likely result in the drop-off not being triggered.

Note: The release count-down will be reset every time the magnet is attached. However, even with the magnet attached the estimated life span will only be four years.

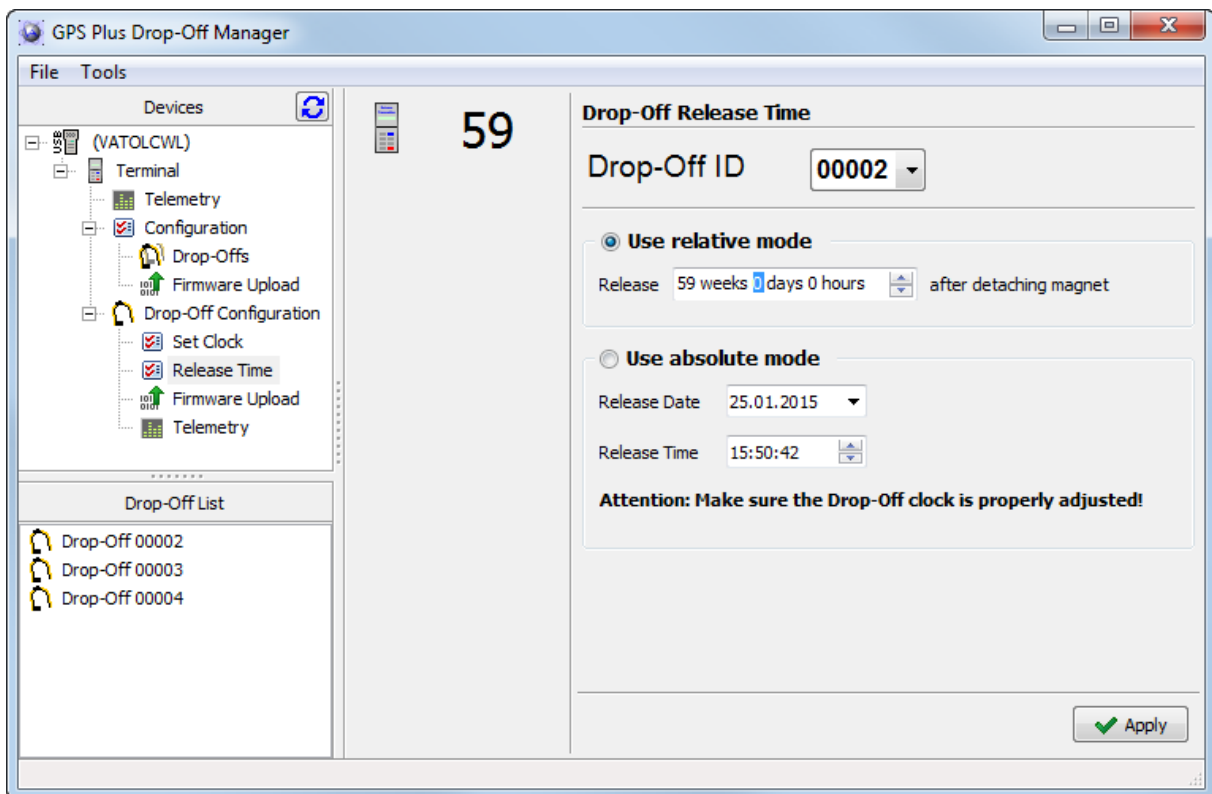


Figure 9: Window for configuration of drop-off timer control



- **Absolute Mode:** You define a discrete day and time (hours, minutes, seconds) for the release. By default, the release date is set to four years after the current date.

Note: If the magnet is attached on the date of release, the drop-off unit is disabled and will not fire. If the magnet is removed afterwards, **the drop-off unit will stay disabled for five days**, before it fires. This will give you enough time to change the release time and prevent misfiring. Due to this safety precaution, it is not possible to set the release date to shorter than five days from configuration time.

To change the release time, press **Apply** and follow the instructions (Figure 10). If the release time in the relative mode is shorter than one day, you will be warned and have the chance to abort the process and select a longer release time.

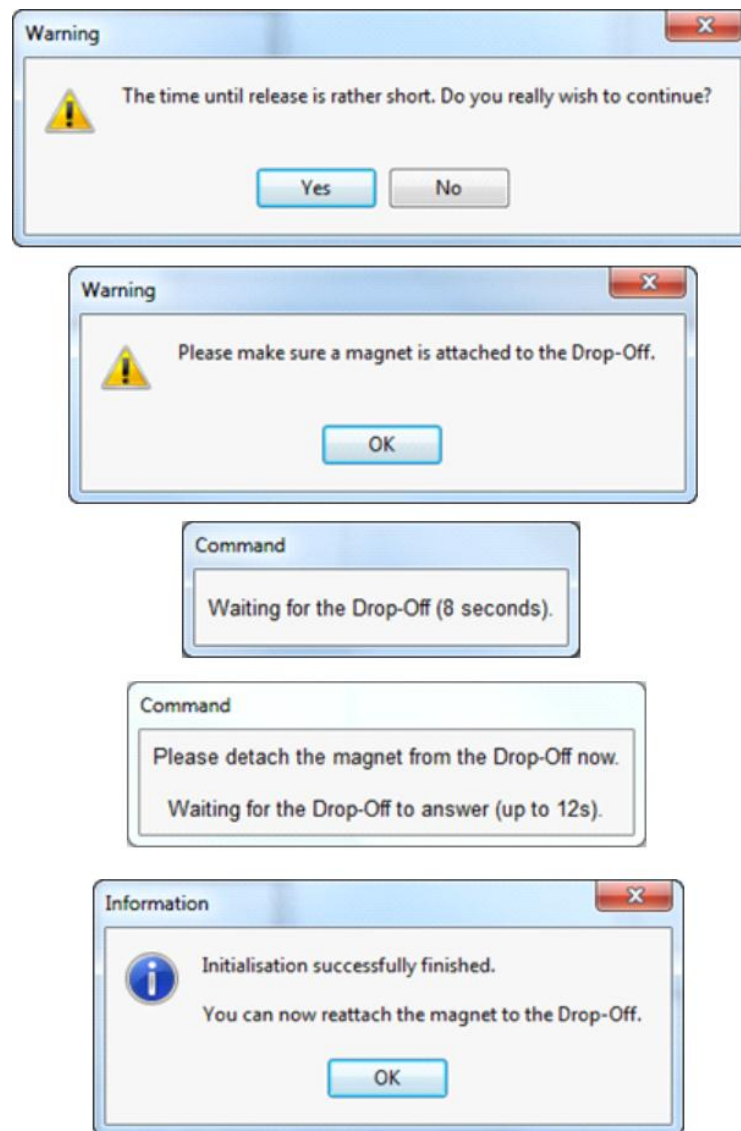
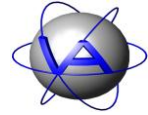



Figure 10: Windows for transmitting the release mode and time



7.3 Firmware Upload

You can also upload new firmware on the drop-off. Choose the firmware .BIN-file with the  button and press **Apply**.

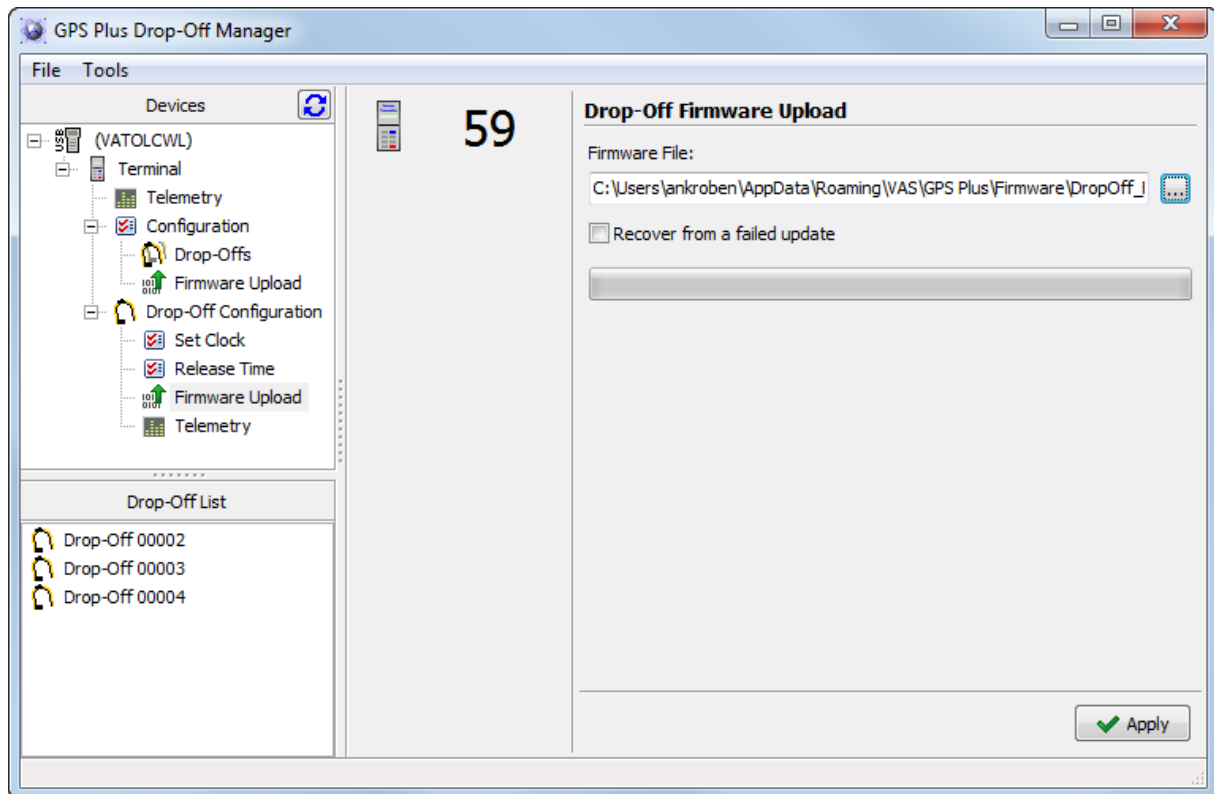


Figure 11: Window for drop-off firmware upload

The following windows will guide you through the process. If the magnet is not already attached to the drop-off, put it now to the designated dent or felt pad (see Figure 1 for correct position). Wait eight seconds for the drop-off to respond to the terminal. When the next window appears, detach the magnet from the drop-off. After up to 12 seconds, the next window will ask you to attach the magnet again, and then to detach it.

Note: You will be asked twice to attach and detach the magnet!

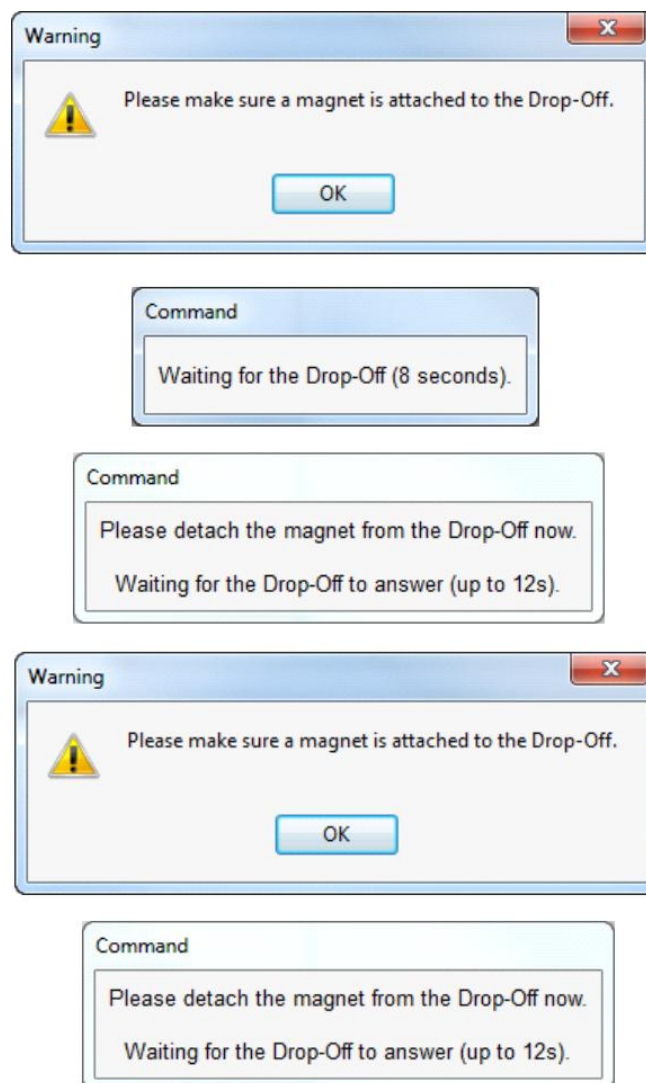
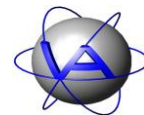


Figure 12: Windows for uploading firmware to the drop-off

After the Upload has started, you can track the upload on the progress bar (Figure 23).

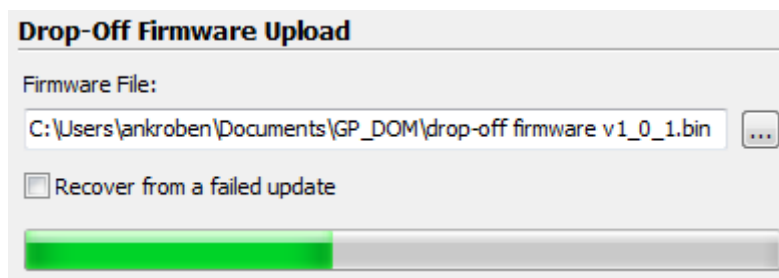
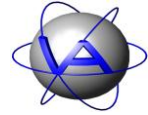


Figure 13: Progress bar during firmware upload



At the end of the successful upload you will see this picture:

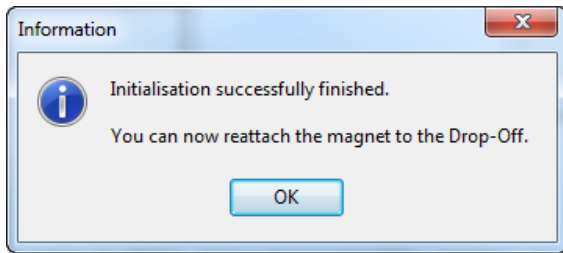


Figure 14: Success message for drop-off firmware upload

Recovery from failed update

In rare cases it is possible that communication between terminal and drop-off is interrupted during update. In this case, the drop-off will not respond correctly to the terminal anymore. If you did not receive the success message shown in Figure 14, check “Recover from a failed update”. The program will now reinitialise communication with the terminal and restart the update.

7.4 Drop-off telemetry

With Drop-Off → Telemetry, you can access the drop-off's current configuration. There are two ways to access the drop-off (Figure 15):

- “Wait for manually triggered telemetry transmission”: The terminal searches for drop-offs in its range and gives telemetry from the first drop-off it establishes contact with. This is the fastest option, but it will only communicate with drop-offs with attached magnet. (**Note:** Attaching the magnet will reset the relative time counts and thus the time to elapse until release. Information on how long the drop-off has been active before will get lost.)
- “Get telemetry from specific Drop-Off (radio-controlled Drop-offs only)”: The terminal searches for a specific collar. (**Note:** Only applicable for radio-controlled collars while radio-communication is enabled.) This takes more time than the unspecific telemetry.

Note: While the magnet is detached from the drop-off, it counts down the time to release. To make sure that the release time is counted from the time of deployment and the drop-off does not fire while in the storage, attach the drop-off magnet after configuration and detached it only when deploying the collar to the animal. You can reset the release time counter by attaching the magnet for a short moment.

To receive telemetry data, press **Request** to access the drop-offs.

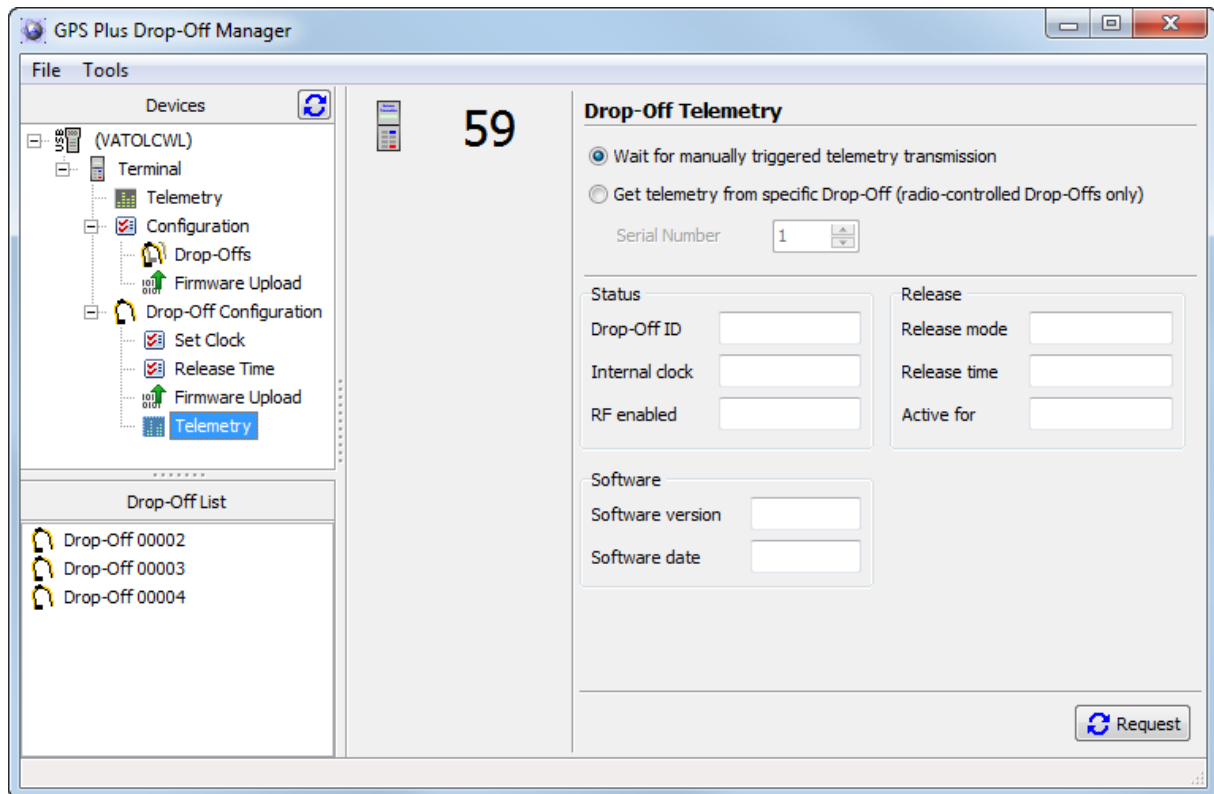


Figure 15: Window for drop-off telemetry



7.4.1 Manually triggered telemetry

The following windows will guide you through the process of manually triggered telemetry transmission:

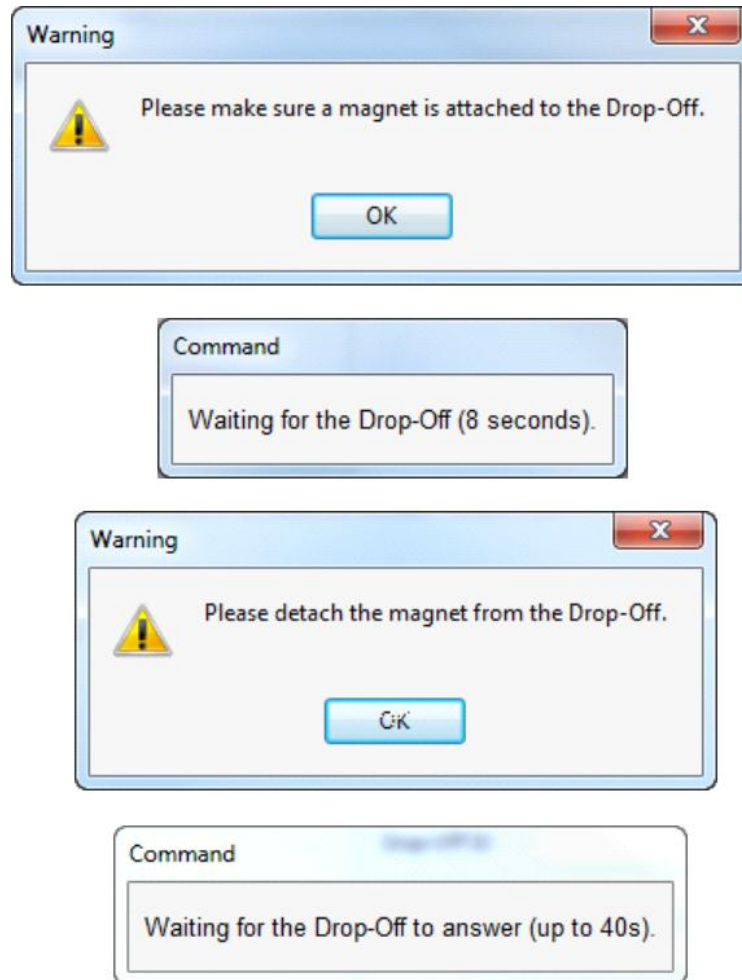
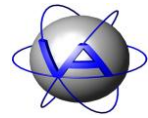


Figure 16: Windows while manually triggering telemetry



7.4.2 Specific telemetry

For specific telemetry, make sure that the magnet is **detached** from the drop-off. Only one window will appear in this process and you do not need to move the magnet:

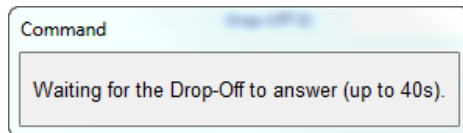


Figure 17: Window during request of specific drop-off telemetry

If the magnet is still attached, the information Command (not responding) will appear in the top frame. After successful communication, the telemetry data will appear (Figure 18).

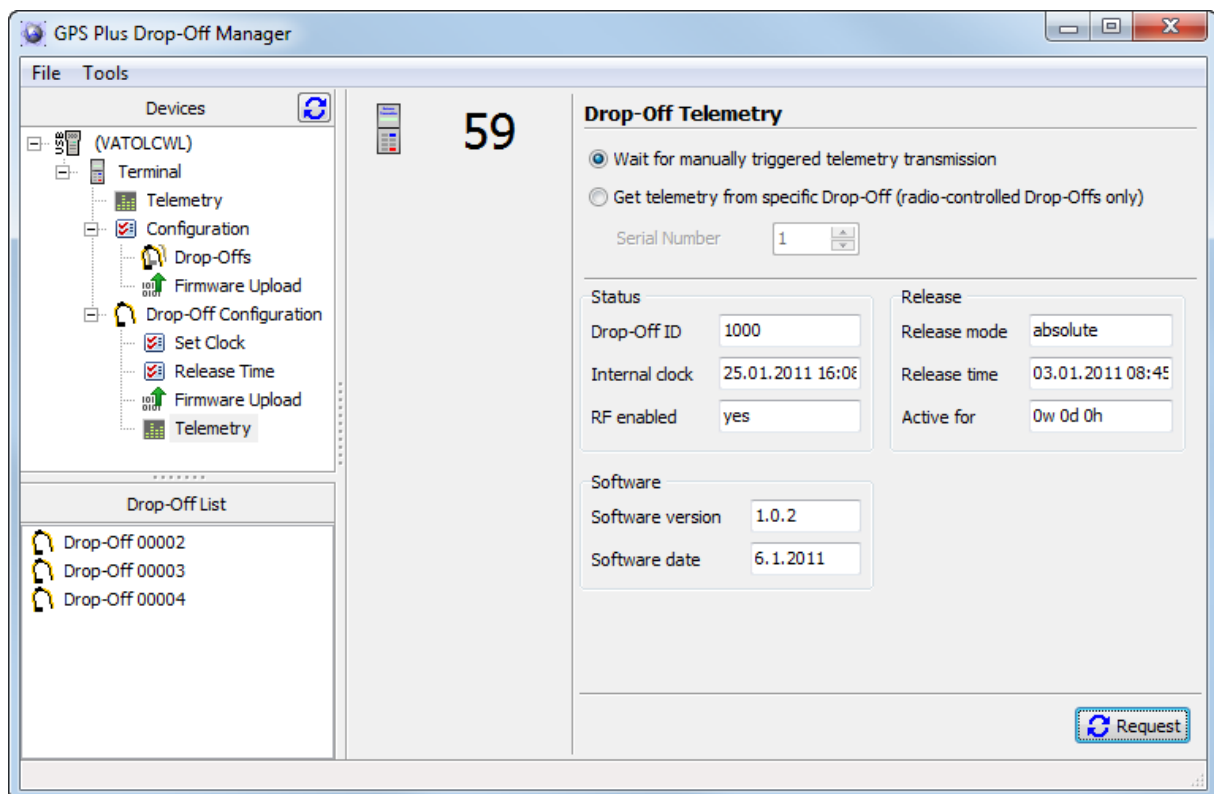


Figure 18: Window with telemetry data

Status

Drop-off ID	ID number of the drop-off
Internal clock	the current date and time of the drop-off
RF enabled	information if radio transmission of the drop-off is enabled (yes/no)

Release



Release mode	timer release mode currently enabled in the drop-off (relative/absolute)
Release time	relative time span or absolute date currently programmed into the drop-off
Active for	time the drop-off has been active since last configuration

Software

Software Version	version number of software currently installed on the drop-off
Software date	release date of software currently installed on the drop-off

Note: Telemetry from specific drop-off is only possible for **radio-controlled** drop-offs, not for timer-controlled drop-offs.

Note: When using telemetry from specific drop-off, make sure you enter the correct **serial number of the drop-off**, not of the collar.

Note: The telemetry data will be removed from the mask if you switch to another window.



8 Register a new drop-off

To register a drop-off on your computer, use Tools ⇒ Load registration file. The registration files can be found on the CD accompanying the drop-offs in the folder KeyFiles. If you select a key file, the drop-off will be automatically added to your drop-off list (see red arrow in Figure 19).

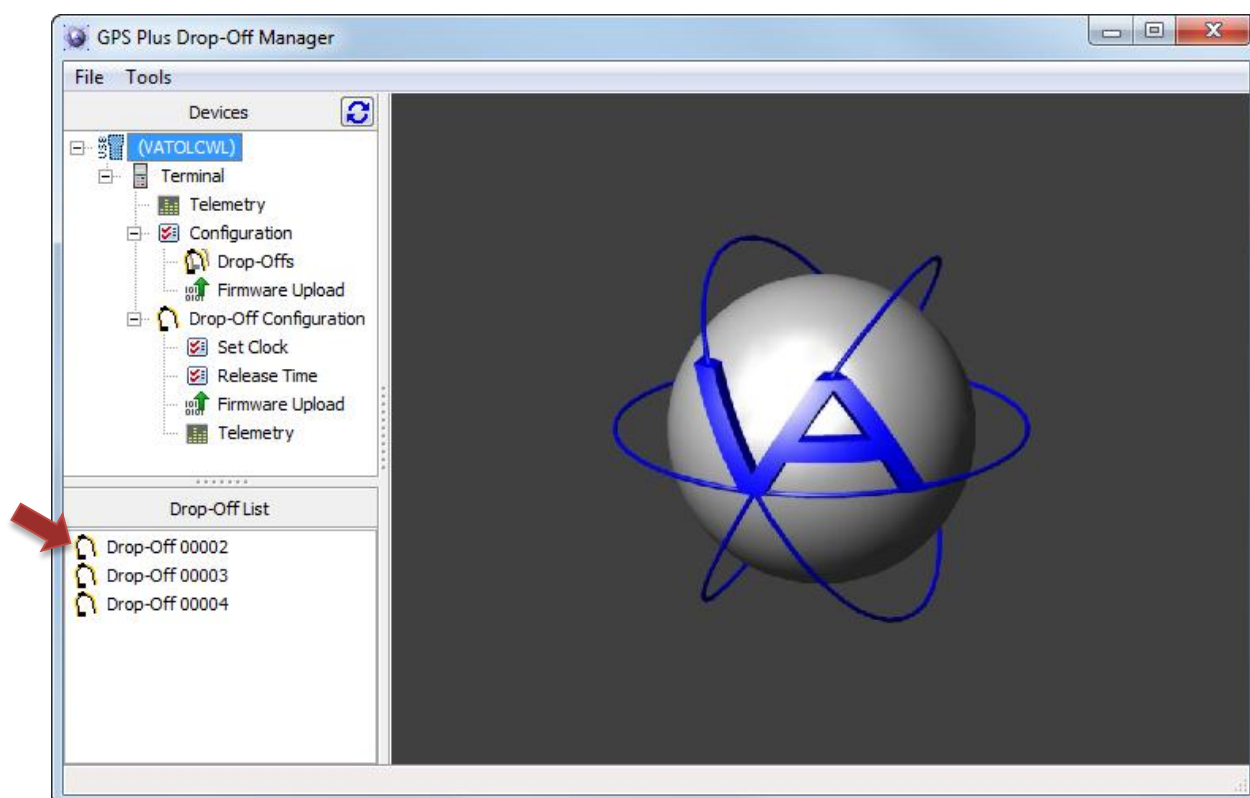


Figure 19: Main window with drop-off list (red arrow)

To delete a drop-off from this list, use right-click on the drop-off and select Delete.

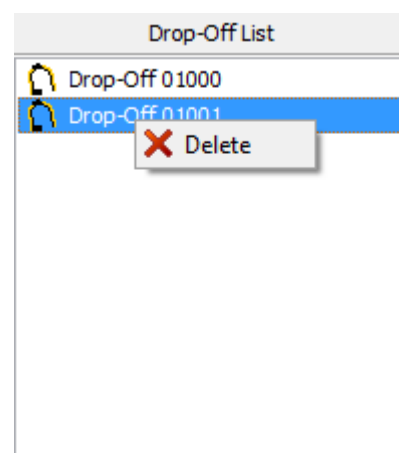


Figure 20: Drop-Off list



9 Error messages

eCommReceiverFailed: No response received from Terminal. Make sure it is turned on and try again.

This message will appear whenever the computer was not able to establish contact with the terminal.

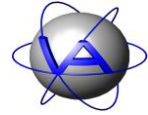
The request timed out. Please try again. If the issue persists, there might be a problem with the Drop-Off.

This message will appear whenever the terminal was not able to establish contact with the drop-off. To keep energy consumption low, the drop-off will only wake up every 8 s to listen for communication from the terminal. If the terminal does not reach the drop-off during this time, you have to resend the request. A time-out is most likely if you need to move the magnet during the defined window, for if the magnet is moved to late, the window will be missed.

If you receive a time-out message, check if the magnet is correctly removed or in the correct position on the drop-off. Also check if the drop-off is in range of the terminal. Retry again and make sure that you move the magnet at the correct times. If the problem persists, contact us for further steps.

No response received from Terminal!

This message indicates a communication problem between computer and terminal. Please check if the terminal is switched on and correctly plugged into the USB-port of your computer.



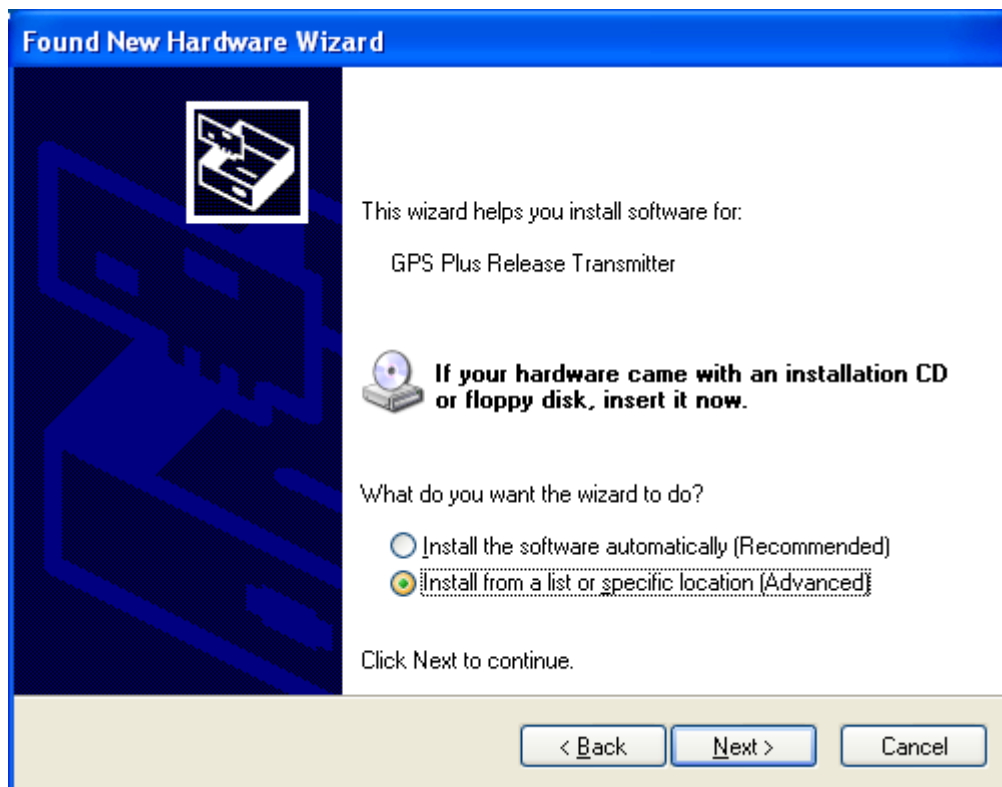
10 Installation of the Release Transmitter driver

In some cases, the driver for the release transmitter will not be installed automatically. If this is the case, follow these steps for Windows XP:

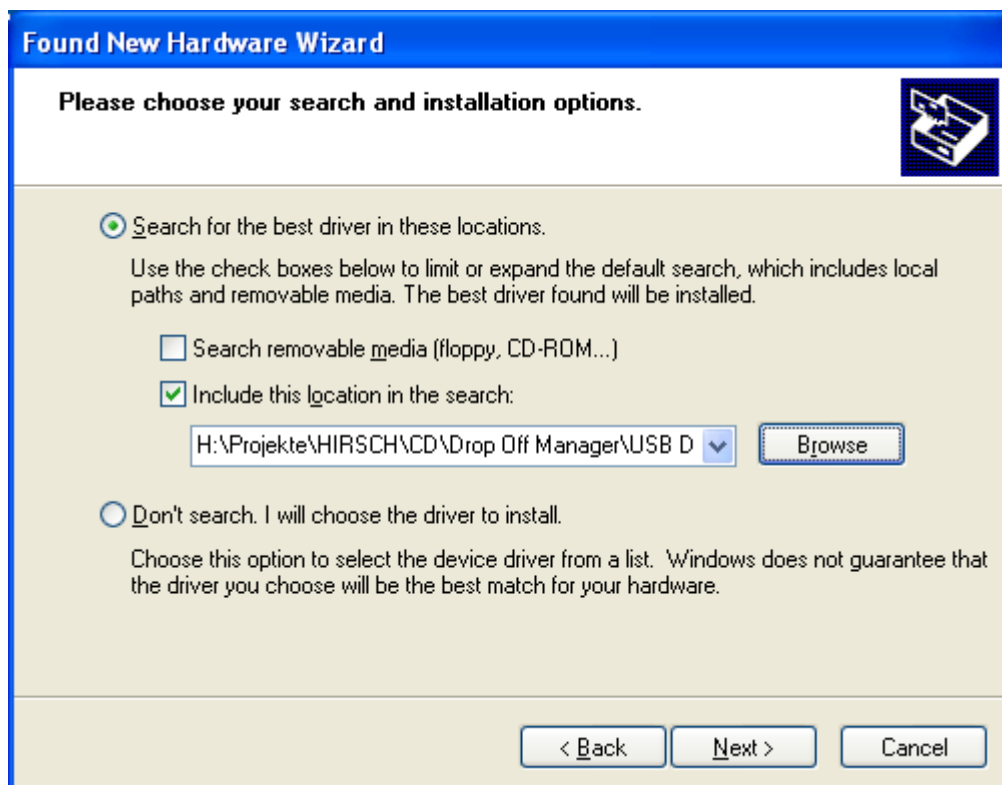
1. Insert the VECTRONIC CD into your PC.
2. Connect the Release transmitter to your PC via an USB cable. Your PC will automatically try to install the device and the Found New Hardware Wizard will open:



3. Select “No, not this time” and click on “Next”.




4. Select “Install from a list or specific location”





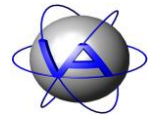
5. Select “Search removeable media”. Go to the VECTRONIC CD and select the folder “Drop Off Manager \ USB Driver for Release Transmitter”.



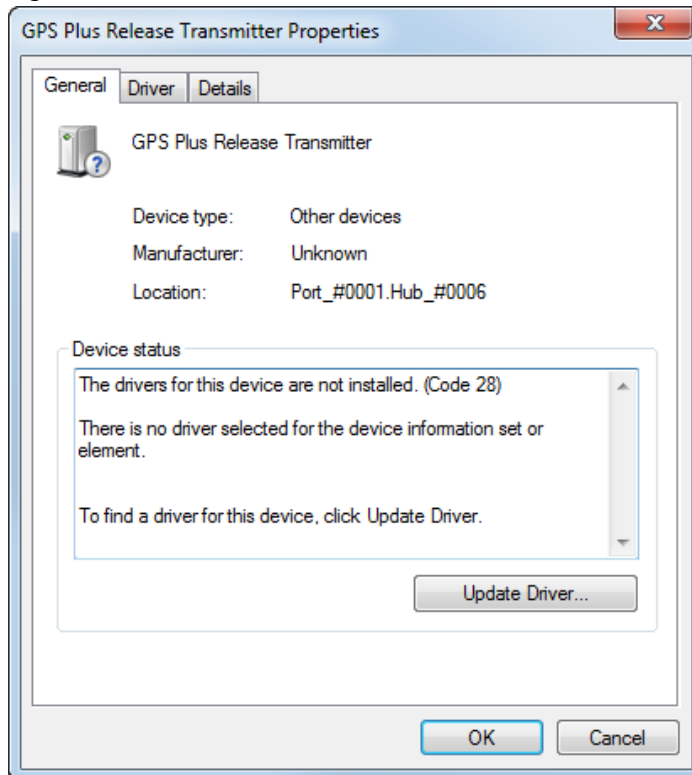
6. Select continue anyway. The driver will now be installed. After the driver has been installed successfully, switch on the release transmitter by pressing the  button. You can now use the release transmitter.

Follow these steps for *Windows Vista / 7*:

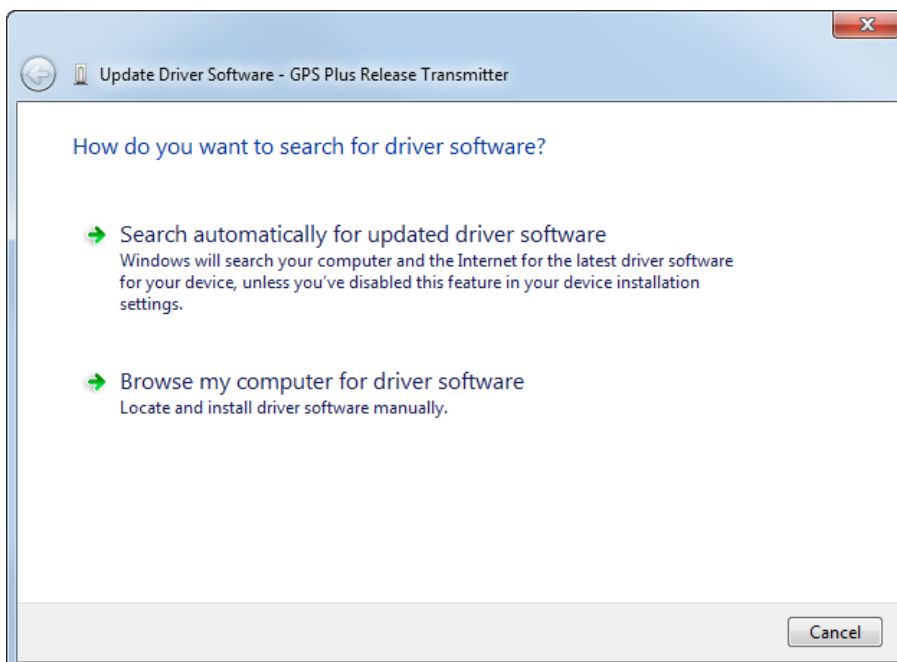
1. Insert the VECTRONIC CD into your PC.
2. Connect the Release transmitter to your PC via an USB cable. Your PC will automatically try to install the device.
3. A warning will appear reporting that the device was not installed correctly. Open the Device Manager: Go to “Start” ⇒ “Control Panel” ⇒ “Hardware and Sound” ⇒ “Devices and Printers: Device Manager”.



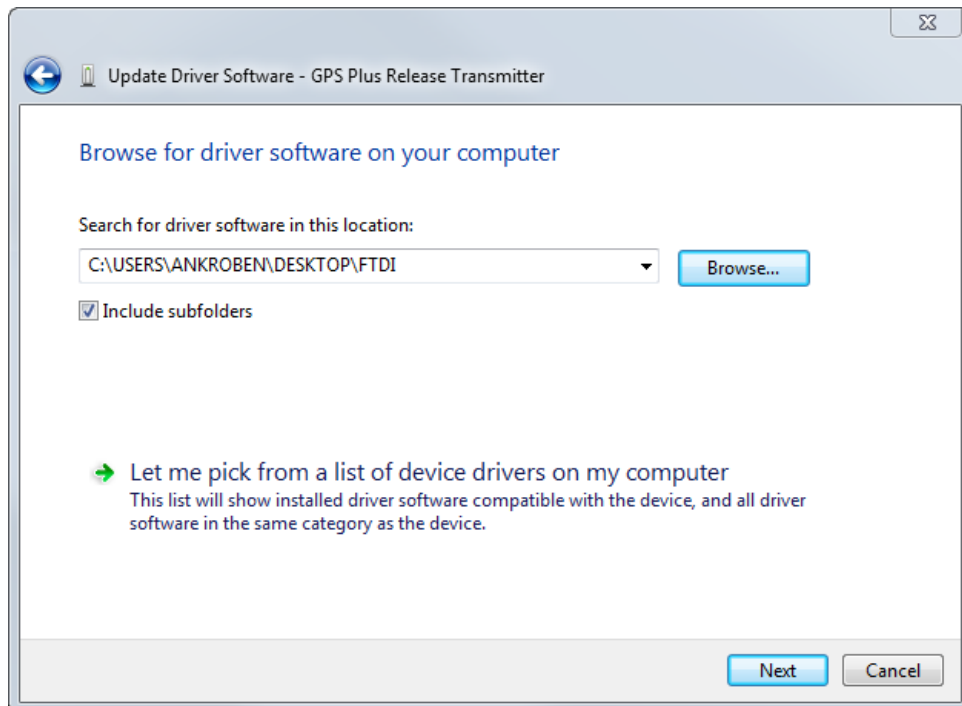
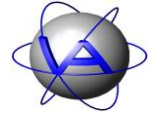
4. Open the node “Other Devices” and double-click on GPS Plus Release Transmitter.



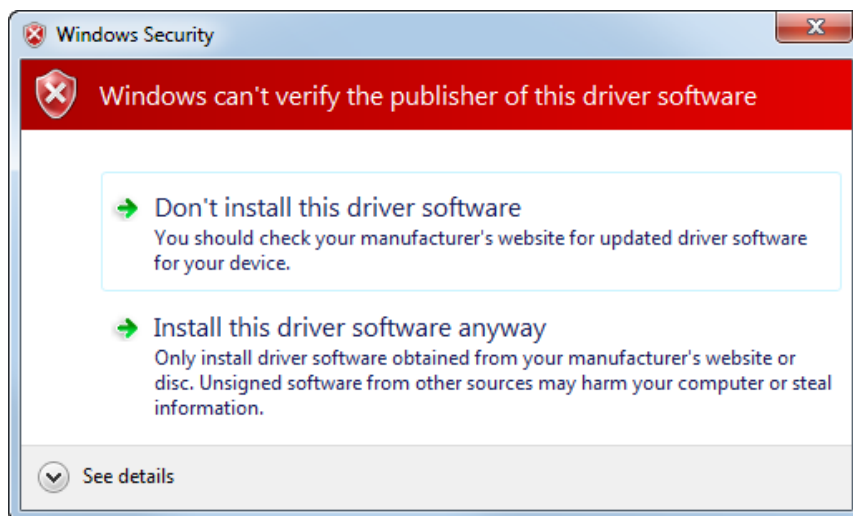
5. Click on “Update Driver”.




6. Select “Browse my computer for driver software”.



7. Browse on the VECTRONIC CD for the folder “Drop Off Manager \ USB Driver for Release Transmitter” and click “Next”.



8. Windows will warn you that it cannot verify the publisher of this driver software. Click on “Install this driver software anyway”. Windows will now install the driver software.
9. After the driver has been installed successfully, switch on the release transmitter by pressing the  button. You can now use the release transmitter.